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(54) **METHOD OF ADDRESSING MESSAGES AND COMMUNICATIONS SYSTEMS**

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#### Related U.S. Application Data

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(51) Int. Cl.<sup>7</sup> ..... **H04Q 7/00**

(52) U.S. Cl. .... **370/329; 370/346; 370/347**

(58) Field of Search ..... **370/462, 408, 370/230, 437, 441, 442, 449, 458, 463, 342, 345-6, 347-8, 475, 329**

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#### (57) ABSTRACT

A method of establishing wireless communications between an interrogator and individual ones of multiple wireless identification devices, the method comprising utilizing a tree search method to establish communications without collision between the interrogator and individual ones of the multiple wireless identification devices, a search tree being defined for the tree search method, the tree having multiple levels respectively representing subgroups of the multiple wireless identification devices, the method further comprising starting the tree search at a selectable level of the search tree. A communications system comprising an interrogator, and a plurality of wireless identification devices configured to communicate with the interrogator in a wireless fashion, the respective wireless identification devices having a unique identification number, the interrogator being configured to employ a tree search technique to determine the unique identification numbers of the different wireless identification devices so as to be able to establish communications between the interrogator and individual ones of the multiple wireless identification devices without collision by multiple wireless identification devices attempting to respond to the interrogator at the same time, wherein the interrogator is configured to start the tree search at a selectable level of the search tree.

37 Claims, 3 Drawing Sheets

